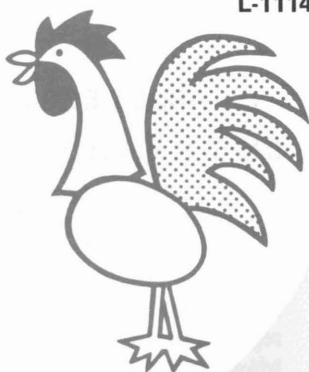


About Eggs...



EGG QUALITY

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Texas Agricultural Extension Service
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ABOUT EGGS — EGG QUALITY

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The homemaker is concerned with two types of egg quality. The first is interior quality of the egg and how the egg will behave when cooked, baked or whipped. The second is exterior quality. A clean, sound shell of proper shape is required by all grading regulations and is easiest to judge by the consumer. Interior quality is not as easy to judge. High-quality eggs usually perform better in cooking, but there is essentially no loss of nutrients in lower quality eggs.

EGG STRUCTURE

To understand eggs and be able to judge their interior quality, individuals need some knowledge of egg structure. An egg consists of a hard mineral (mainly calcium) outer shell, two shell membranes just inside the shell, an air cell, egg white (two layers of thick albumen and two layers of thin albumen), chalazae and yolk.

The egg fills the shell at the time it is laid. As it cools, the interior contents contract forming an air pocket between the two shell membranes, usually in the large end of the egg. A high-quality egg has a small air cell. The albumen is thick, upstanding and frequently cloudy. Cloudiness or milkiness merely indicates that the carbon dioxide which is naturally present in a fresh egg has not escaped through the shell. *As an egg ages, the white becomes clearer, the albumen and yolk less upstanding and the air cell larger.*

The white, twisted, rope-like strands of material in the albumen and seemingly attached to the yolk are known as chalazae. They are cords of highly concentrated albumen which support the yolk in the center of the albumen. They are found in all eggs in varying degrees of prominence.

Occasionally, a small blood or meat spot forms in an egg. These eggs seldom reach the consumer, but the spots do not lessen the nutritional value of the egg. The spot may be easily removed and the egg is

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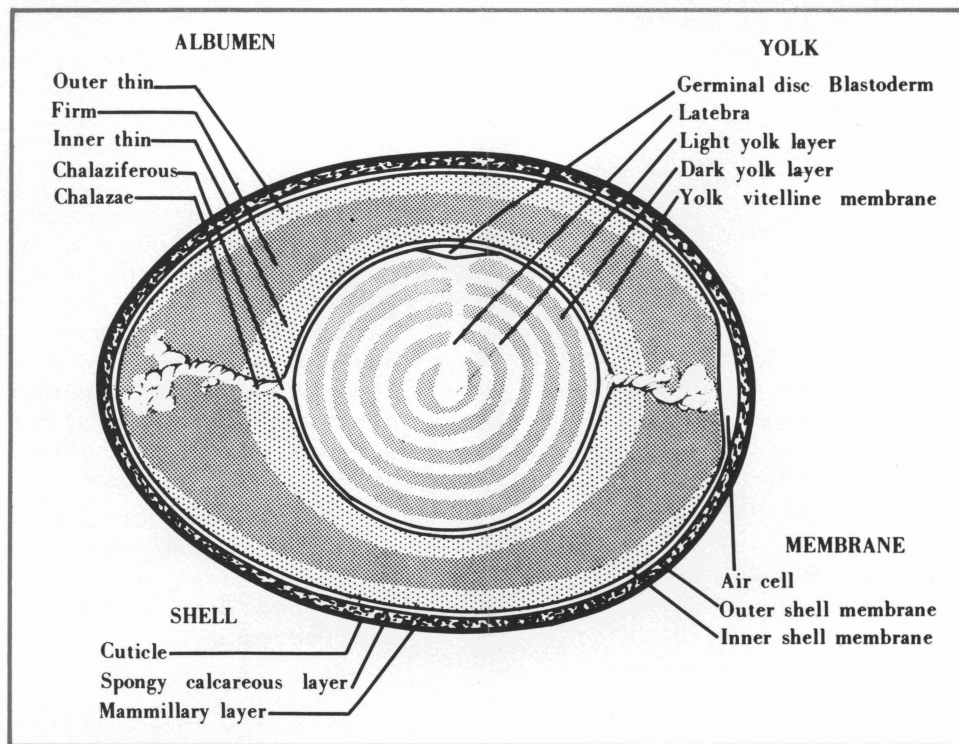
perfectly wholesome to use. These spots are not a sign that the egg is fertile. The chances are slim that a fertile egg will be sold on the market today.

Yolk color is a matter of preference. The color varies depending on the diet of the hen. Eggs produced today tend to have more uniform color because the hens are fed a controlled ration. Many consumers prefer a golden-yellow color. Yolk and shell color are not related to freshness or the nutrition of the egg. Shell color is determined by the breed of the hen laying the egg and it may vary from white to deep brown. Consumer preference has determined largely the color of eggs sold. People in a few areas of the United States pay more for brown

EGG QUALITY

Candling is a process of examining the interior of an egg without breaking its shell. The eggs are twirled in front of a strong light so the inside can be observed. In early times, light from a candle was used for this procedure — thus the term “candling” originated.

Today with mass candling, thousands of eggs can be examined in a short time by use of electronic machinery. Eggs in from one to 12 rows pass over a light beam as they are rotated mechanically. An experienced candler examines the eggs as they pass along a conveyor line and judges the condition of the yolk, the white and size of the air cell. The candler



Egg freshness is judged by the “stand-up-ability” of an egg. The yolk and the firm (outer) thick) albumen are the principal parts responsible for this quality. The firm albumen is thick and viscous when fresh and thin and watery when old. The yolk also becomes thin and flattened as it ages.

eggs. Most people prefer white eggs. The shell color does not affect the nutritive value, quality, flavor or cooking performance of eggs.

removes all defective eggs. This operation frequently is followed by an automatic blood spot detector, automatic scales to determine size and automatic packing equipment to carton the eggs.

To further assure the maintenance of high quality, a “break-out” test frequently is employed. This test involves the breaking out of a random sample of eggs from each shipment onto a flat surface. Yolks are observed carefully, and the height of the thick white is measured with a micrometer. Fresh, high-quality eggs cover only a small area when broken out. They have a large amount of thick white, which stands high and firm around the yolk. As the egg ages, the amount of thick white decreases and the white becomes thinner.

To replace the natural “bloom” which is removed from the shell when the egg is washed and sanitized, many processors spray the large end of the egg shell with a fine mist of a clear, tasteless and odorless mineral oil. This coating reseals the natural pores in the shell and retards the loss of carbon dioxide and moisture from the egg.

A high-quality egg:

- has a clean, sound, normally shaped shell.
- has a high, upstanding yolk and albumen.
- produces excellent results in cooking.
- has an attractive taste and odor when properly cooked.
- gives maximum eye appeal to other dishes.
- contains all the essential nutrients except vitamin C.
- is an outstanding value when compared to other protein foods.

ACKNOWLEDGMENTS

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This leaflet and all in a series of nine were adapted from "Eggs - Basic Information for Young Homemakers," American Egg Board, and other sources.

Extension foods and nutrition specialists reviewed this leaflet and provided helpful suggestions.

EGGS have a fascinating history. They are among the most versatile of all foods and are said to have a thousand uses. History reveals that eggs were a food delicacy in ancient and biblical times and a staple food wherever abundant.

Ancient people considered eggs as a sacred symbol, and they believed an egg represented the world and its elements: shell, (earth); whites, (water); yolk, (fire); and under the shell (air). The breaking of eggs was a ceremony and a means of foretelling events. Men of early times hung eggs in Egyptian temples of worship. Artists glorified them in paintings and sculpture. Today eggs are still used for decorative purposes — as in Christmas and Easter ornaments and egg shell mosaics.

This series of leaflets numbered L-1114 — L-1122, covers topics of egg quality, buying and storing, six basic methods of egg preparation and eggs in the diet. Each is available from your local Extension agents.

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